

**WHAT IS CLAIMED IS:**

1. A composite metal product of a carbon nano material and a low melting point metal comprising a preliminarily molded porous member of the carbon nano material and the low melting point metal, said preliminary molded porous member being impregnated with said low melting point metal in a molten state thereby to form the composite metal product.
2. The composite metal product according to claim 1, wherein the low melting point metal comprises at least one selected from the group consisting of metals, alloys of magnesium (Mg), tin (Sn), aluminum (Al), copper (Cu), lead (Pb), and zinc (Zn).
3. A method of producing a composite metal product, comprising the steps of:
  - injection molding a carbon nano material and a plasticized resin binder to form a preliminarily molded member;
  - degreasing the preliminarily molded member by heat treatment and forming a preliminarily molded porous member comprising the carbon nano material;
  - inserting the preliminarily molded porous member into a cavity of a mold for a product;
  - injecting a molten low melting point metal material into the cavity;
  - impregnating the preliminarily molded porous member with the low melting point metal material by injection pressure; and
  - obtaining the composite metal product comprising the low melting point metal material and the carbon nano material integrally composited with.

4. The method according to claim 3, wherein the preliminarily  
molded member is injection molded by a screw type  
preplasticization injection machine comprising a plasticizing  
device for plasticizing the carbon nano material and the resin  
5 binder and a injection device for injecting the plasticized  
carbon nano material, the plasticizing device and the  
injection device being disposed separately, both the devices  
are communicated with each other through a flow path, and the  
plasticized carbon nano material is injected after metering by  
10 the injection device.